

CAMBALLIN IRRIGATION AREA



Official Opening

BY

THE HON. G. P. WILD, M.B.E. M.L.A.,
MINISTER FOR WORKS AND WATER SUPPLIES
WESTERN AUSTRALIA

ON
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1961



Aerial View

CAMBALLIN IRRIGATION PROJECT

History of Company's Activities

MR. PETER FARLEY of Associated Rural Industries Ltd. first recognised the irrigation potential of the Fitzroy River flats when he visited the area in 1950 accompanied by the Hon. H. V. Johnson, M.H.R., who, at the time, was Minister for the Interior. The opinion that conditions were suitable for rice growing was later confirmed by Mr. Walter Poggendorff—Chief of Plant Breeding Division, New South Wales Department of Agriculture.

Initial experiments were carried out by Mr. Kim Durack, who selected an area of land adjoining Uralla Creek approximately eight miles from Liveringa Homestead. Water was pumped from a pool in the Creek to irrigate an area of up to 80 acres of rice and safflower.

CROPS AT



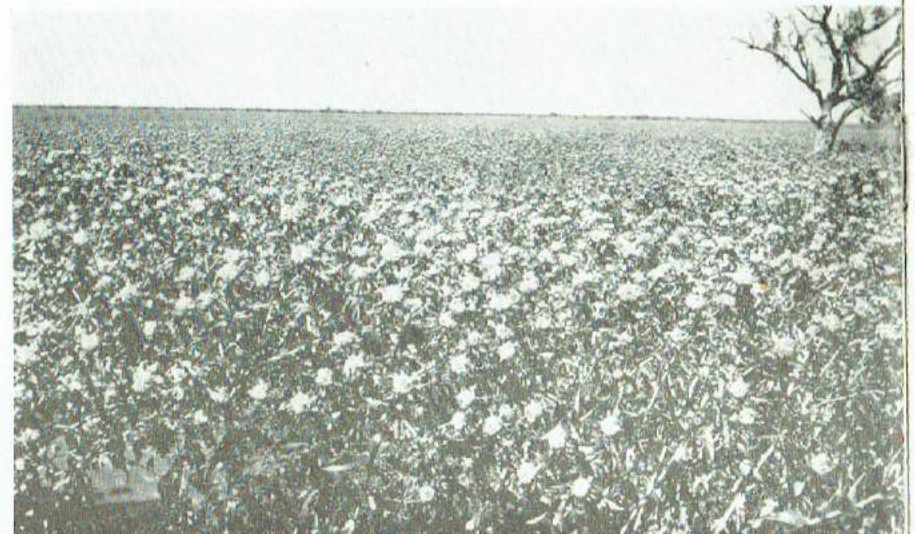
Rice

CAMBALLIN

Sudan Grass



Safflower



A company known as Northern Developments Pty. Ltd., and financed principally by Associated Rural Industries Ltd., was formed to control the project. Results of the experiments were sufficiently positive for the Company to approach the State Government with proposals for an agreement whereby the Government would make land available to the Company and provide works necessary for the supply and control of irrigation water. The Company agreed to proceed with the efficient growing of rice and other rotational crops subject to certain financial and administrative provisions. A satisfactory agreement was negotiated and ratified by an Act of Parliament in 1957.

Northern Developments Pty. Ltd. then appointed Mr. Keith Gorey, an experienced farmer from the Murrumbidgee Irrigation Area and a director of the Company as Manager to commence the commercial growing of rice.

In January, 1958, the first 200 acres of rice were planted. Although experiments had been conducted there were still many problems associated with agriculture to be solved in this new and comparatively isolated area of the Kimberleys. Various factors, including time of planting, selection of seed, weed infestation, flood damage, water shortages and bird damage all affected crop yield and the area that could be planted.

Despite these obstacles the Company continued to expand its activities each year, and in the 1961 season planted 1,200 acres of rice, together with smaller areas of Sudan Grass and Safflower.

Government Undertakings at Camballin

UNDER THE TERMS of the Agreement the State Government resumed 20,000 acres from the Liveringa Pastoral Lease and made it available to Northern Developments Pty. Ltd. on a rental basis with the right of eventual purchase. In addition the Government has provided the following facilities to assist the Company in the successful development of the project.

- (a) Access roads and associated Creek Crossings.
- (b) Housing and Water Supply at the Township.
- (c) Engineering Works necessary to control and supply irrigation water.

Road Works

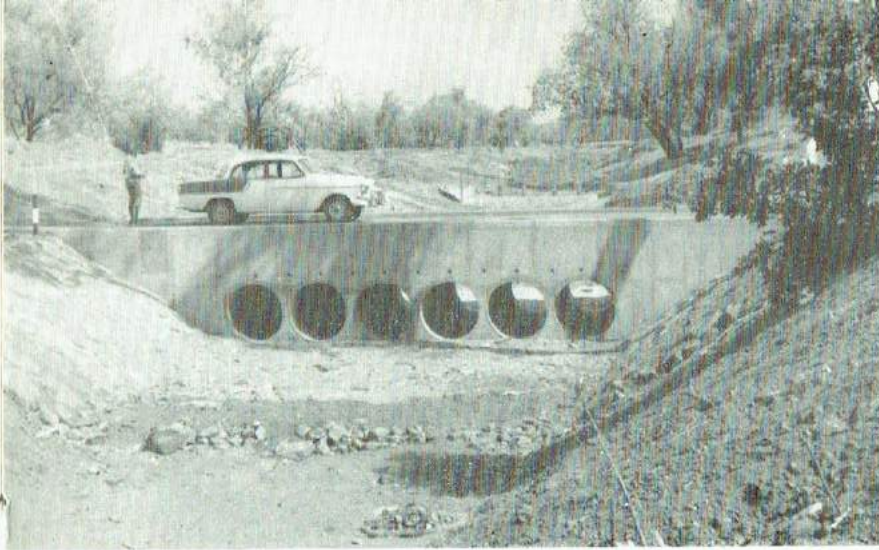
The Main Roads Department has constructed in stages a road through Camballin to the 17-mile Dam and finally to the site of the Fitzroy Weir. This road has provided the access necessary for the operation of the scheme—particularly in the “wet” season.

Housing

Camballin has been gazetted as a townsite. At the present time there are seven houses in the town and an additional three houses are in course of erection by the State Housing Commission for rental under the Commonwealth State Housing Scheme. A school building is scheduled for completion in June, 1962.

A Homestead building has been erected by Northern Developments Pty. Ltd. for the use of the Company's Manager.

During 1958 the Public Works Department constructed a reticulated Water Supply at Camballin—water is obtained from a bore.



Uralla Creek—River Road Crossing



Entrance to Siphon

Engineering aspects of the Camballin Project

THE COMPANY'S IRRIGATION AREA is located alongside the Uralla Creek which is an anna branch or flood outlet of the Fitzroy River. Being on the flood plain of the Fitzroy River the area is subject to periodic inundation.

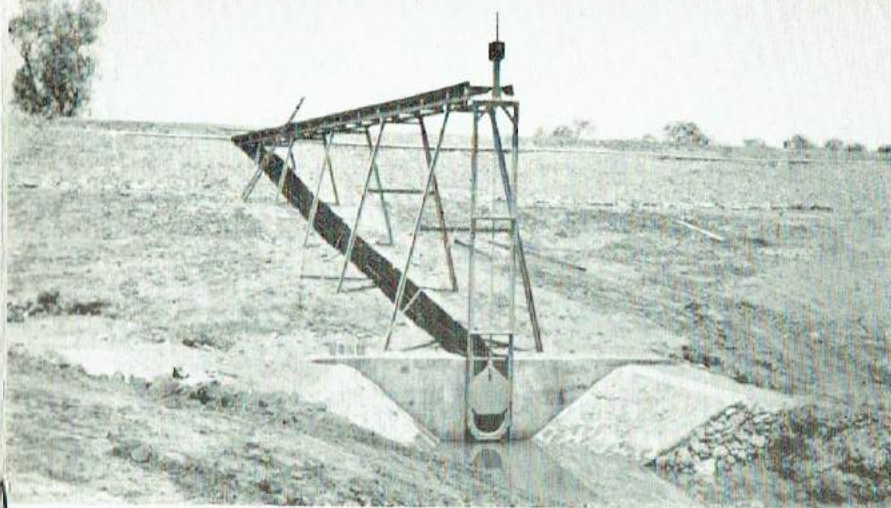
Uralla Creek receives some water from local creeks (notably Mt. Wynne Creek) but the major flow is obtained from the Fitzroy River.

In broad outline the Camballin Scheme consists of a weir that has been constructed across the Fitzroy River to divert a controlled portion of the stream flow into Uralla Creek. The original creek bed has been regraded and enlarged to convey water 17 miles to an earthen dam from where it is able to obtain command over the Company's Irrigation Area. The flow of water from the 17-mile Dam is regulated through an offtake structure into the main supply channel on the north side of Uralla Creek. Water is passed under Uralla Creek through a six-foot square concrete siphon in order to irrigate land on the south side of the creek.

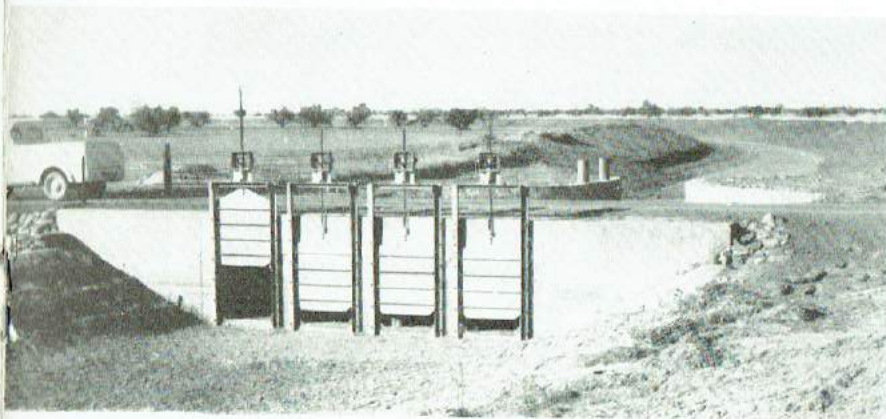
Prior to the construction of the Fitzroy Weir it had been necessary to pump water into Uralla Creek during periods when flow of the Fitzroy River was low.

All hydraulic structures at Camballin have been constructed by the Public Works Department's day labour organisation and all structural steel work has been fabricated at State Engineering Works.

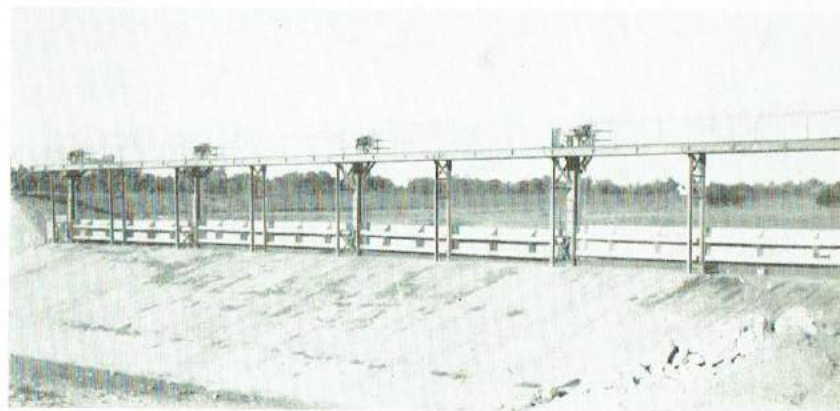
At the present stage there is no provision to construct any large storage dams on the Fitzroy River and the Camballin Scheme is therefore virtually dependent on stream flow. Rainfall in the Kimberleys is restricted to the "wet" season (i.e., December to April) and flow in the Fitzroy River ceases for five or six months each year. There will be a reserve storage of approximately 10,000 acre feet in the Fitzroy Weir and 17-mile Dam and this will provide final waterings for some irrigated crops late in the season after river flow has ceased. However, at the beginning of the season, crops cannot be planted until river flow commences. This imposes a limitation on agricultural development which unfortunately must be accepted until conditions are economically favourable for further development.



Low Level Offtake



Control Structure—Offtake to Supply Channel



Spillway

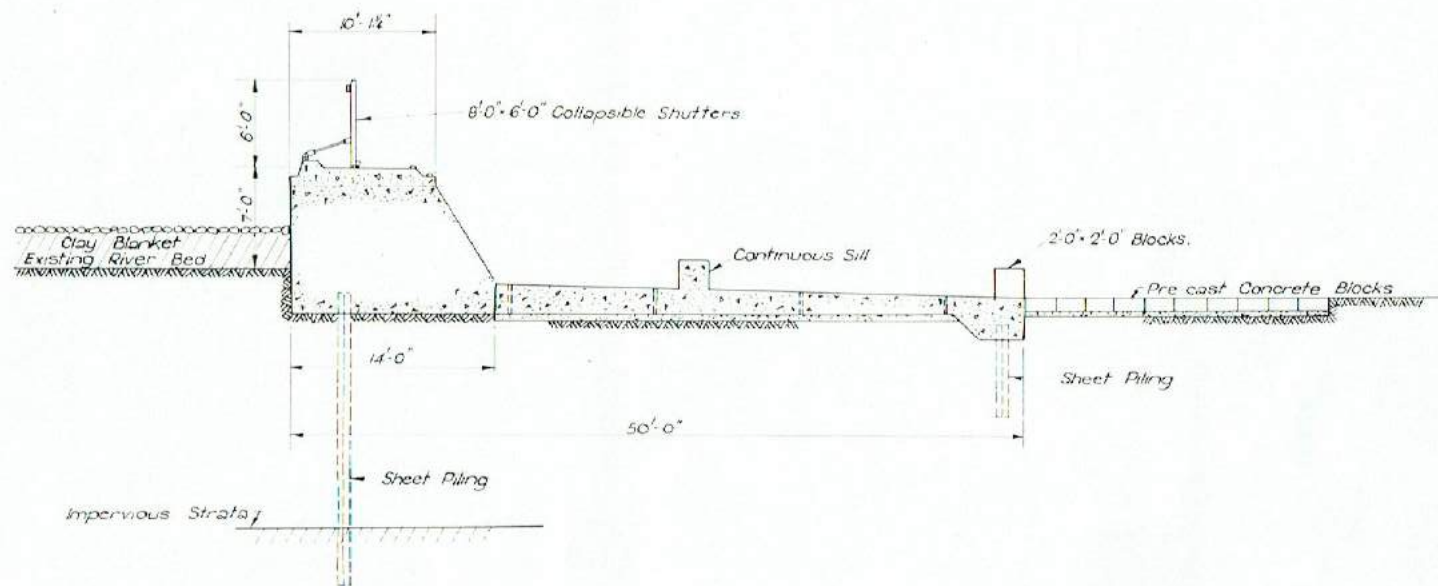
17-MILE DAM

Fitzroy River Weir

THE LARGE RIVER FLOWS, the flat flood plains always prone to erosion, siltation of the river, and access difficulties during the "wet" season were problems to be overcome in the design of a suitable diversion structure to be built across the Fitzroy River. Full investigations and considerations were made of existing structures both overseas and in Australia. Finally, following a visit to India and Pakistan by Departmental engineers a design was adopted which was based on the type of structure successfully developed in those countries.

Briefly the weir consists of a broad concrete sill built on the compacted sand of the river bed with a steel sheet piling cut off driven through the sand into the impervious clay sub-soil. The spillway section which is 458 feet long, is surmounted by 47 steel shutters each 6 feet high and 8 feet long. The shutters are hinged in such a manner that they automatically collapse and lie flat on the crest of the sill when the river level reaches a predetermined level. The structure will therefore offer a minimum of interference to the large flood flows of the river. The shutters may be raised again into an upright position by a gantry which travels on rails along the concrete sill.

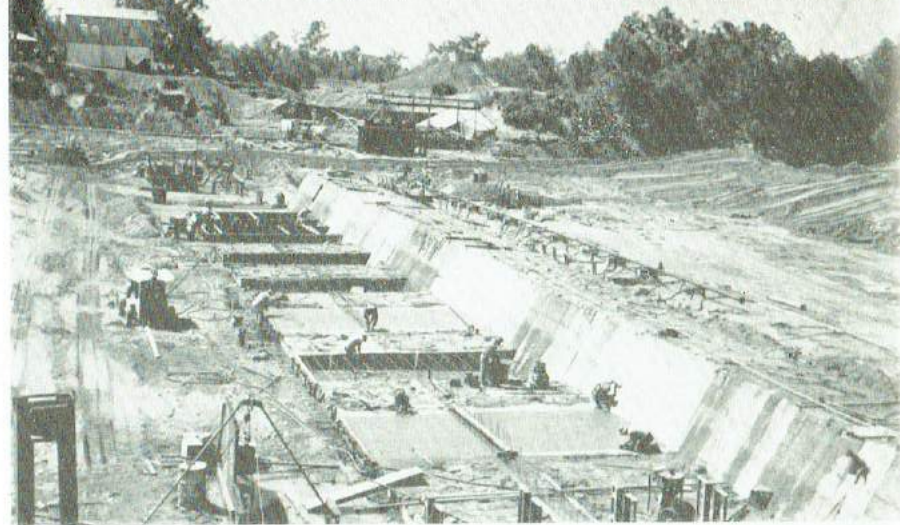
A series of eight sluice gates have been installed at the northern end of the structure to facilitate removal of silt from the vicinity of the Uralla Creek intake.



FITZROY WEIR
TYPICAL CROSS SECTION



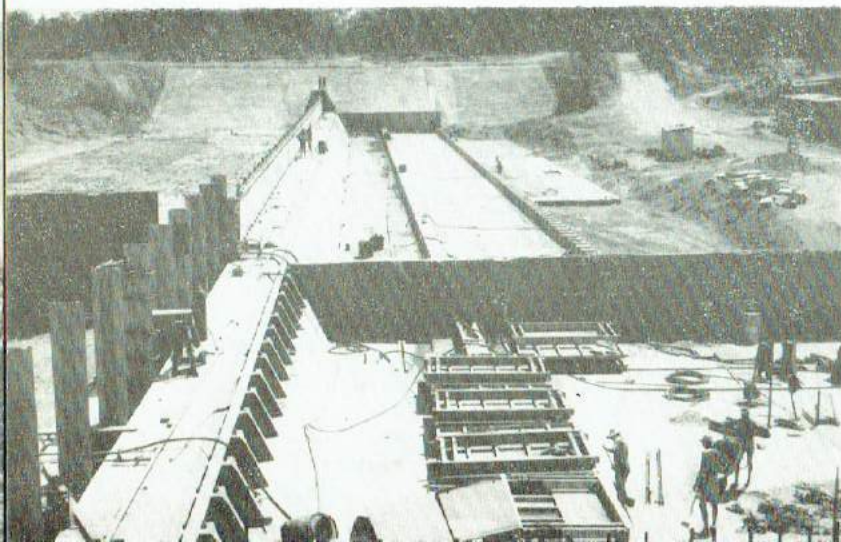
Fitzroy Weir Construction, June, 1961
View from North Abutment showing Sheet Piling



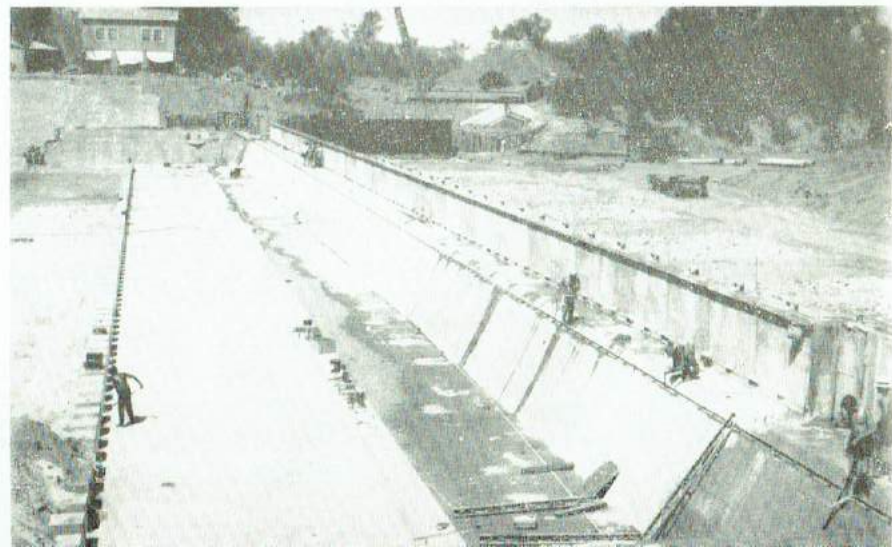
Fitzroy Weir Construction, August, 1961
View from South Abutment

WEIR CONSTRUCTION

Fitzroy Weir Construction, November, 1961
View from North Abutment showing Sluices



Fitzroy Weir Construction, November, 1961
View from South Abutment





Future Development

THE CAMBALLIN IRRIGATION AREA represents only a small proportion of the irrigation potential of the Fitzroy Valley. The Fitzroy River has not been gauged for a sufficiently long period to determine a reliable figure for mean annual flow. However, calculations based on the size of the catchment area and average rainfall indicate that the flow of the Fitzroy River would be quite comparable with the Ord River.

There are large areas of land suitable for irrigation and surveys have been carried out to determine that good dam sites exist on the Fitzroy River (at Dimond Gorge) and also on the Margaret River which is a tributary of the Fitzroy.

Both agricultural and engineering conditions at Camballin were different from these previously experienced elsewhere in the State. No problems have been met which are insuperable but it has been necessary to modify plans and construct a scheme more elaborate than originally conceived.

There is however, no cheap and easy method for developing tropical agriculture in Australia.

The Camballin Irrigation project which has been undertaken by private enterprise with full Government support may well be the break through to irrigated agriculture and closer settlement in the Kimberleys.

